ABSTRACTS

The present invention relates to a waveguide photodetector having a good efficiency of coupling with an optical fiber or a PLC (Planar Light-wave Circuit). In order to increase size of mode beam and to effectively receive light from the optical fiber or the PLC, a thin absorbing layer is used as a core and a semiconductor having an index of refraction similar to that of the absorbing layer is used as a cladding layer. By doing so, it is possible to obtain a good efficiency of coupling with an optical fiber or a PLC. In addition, since a little amount of light proceeds along a waveguide, it is possible to obtain high operating speed even under a high power. Furthermore, by reducing difference between indexes of refraction of the absorbing layer and the cladding layer, it is possible to suppress the "carrier-trapping" generated from small difference between band gaps of the two materials.